

## REMARKS

This is in response to a non-final Office Action mailed January 30, 2004. Applicants respectfully traverse and request reconsideration.

### Claim Objections

Claim 17 was objected to based on an informality. Applicants submit amended claim 17 to overcome the Examiner's noted informality such that the preamble of claim 17 reads "An apparatus." Therefore, withdrawal of the present objection is requested.

### Rejection of Claims Under 35 U.S.C. § 103(a)

#### Claims 15-16

Claims 15 and 16 currently stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,658,448 ("Stefaniak") in view of U.S. Patent No. 6,665,701 ("Combs"). The present invention is directed to, *inter alia*, providing multimedia functionality in a homogenous multi-processor environment. Through the effective utilization, the assignment of specific resources, available processing resources may be allocated and optimally utilized. The present invention discloses allocating the available resources, for optimally performing a task, based on the capabilities of each of the available processing resources and the processing requirements for each task. Therefore, the present invention utilizes a specific determination of optimization on not only the ability of each processing device but also the processing requirements for each of the tasks to be accomplished. Through this dynamic allocation of processing resources, a computing system may operate more efficiently.

Regarding claims 15 and 16, Applicants respectfully submit that the present rejection is improper because the combination of Stefaniak with Combs fails to teach or suggest all of the claimed limitations. More specifically, Stefaniak (and Combs) fail to teach or suggest the allocation of available processing resources among the tasks based on the capabilities of each of the available processing resources and the processing requirements of each of the tasks.

As understood, Stefaniak is directed to processes to specific CPUs. Stefaniak teaches, among other things, generating an affinity mask to group or otherwise categorize multiple processors, such as elements 30A-30F of FIG. 3. Stefaniak teaches generating affinity groups and by assigning available processors to the corresponding groups. Stefaniak teaches the generation of the rules that define processing groups and tasks as being defined by process manager software 16 running on Windows NT. *See* col. 4, lines 25-30. Stefaniak further states “groups can be defined on the basis of the user’s needs for abstraction of the processors.” Col. 4, lines 34-36. In other words, Stefaniak teaches the rules may be generated by a particular software, such as an API software and that the invention allows a user to make association between processes to be executed and available CPUs to the system.

Claims 15 and 16 recites, *inter alia*, “allocating the available processing resources among the tasks based on the capabilities of each of the available processing resources and the processing requirements of each of the tasks.” (*Emphasis added*). In support of the present rejection, the Examiner states on page 3, 3<sup>rd</sup> full paragraph that col. 6, lines 7-25 of Stefaniak discloses rules associating specific tasks with affinity groups. The Examiner further notes that the rules are defined by specific APIs and assigned a task to this specific resource based on characteristics associated with the task and the processor affinity groupings, to which Applicants respectfully disagree.

Rather, Stefaniak discloses a system that allocates system resources and then determines which resource to associate a particular task with. For example, the Examiner is directed to FIG. 5 which illustrates a flowchart defining a group name for an affinity group, step 51, assigning processors to the group, step 52 and then determining if there are any other processors to be added, step 53. If the group has been formed, step 54 then specifies a particular rule associated with that group. The Examiner is further directed to FIG. 6 which illustrates the execution of a task. Step 61 illustrates that a task is initiated in the system for execution by one of the processors. A determination is made if there is a rule defined for this task, step 62. If a rule has been defined the task is assigned to a particular affinity group and if no rule has been defined, the task is assigned to a default affinity group, step 64 and 63, respectively.

Claim 15 claims that the allocation of the processing resources among the tasks based on the capabilities of the processing resources and the processing requirements. Stefaniak teaches grouping the processing resources in the groups based on API software or the user's need for abstraction of the processors. Stefaniak further shows that a rules API module provides the user with the functionality to define objects called rules to associate tasks to different groups. Stefaniak does not teach or suggest allocating the processing resources based on the capabilities of each of the resources in the processing requirements of the tasks. But rather, Stefaniak defines the processing resources and then correlates tasks with particular resources based on user preferences. Stefaniak operates in a completely different way which is grouping processors together and Stefaniak produces a completely different result which is thereupon allocating particular tasks to the processors based on user preferences.

The claimed present invention defines the allocation of resources based on the functionality of the processors themselves and the tasks to be accomplished. Stefaniak does not take into account either the type of task to be processed or the capabilities of the processors.

Therefore, even if one of ordinary skill in the art were motivated to combine Stefaniak with Combs, the combination thereof would fail to produce the claimed present invention. Assuming *arguendo* a combined Combs and Stefaniak system, the combination thereof would not allocate available processing resources among the tasks based on a capabilities of each of the available processing resources and the processing requirements of each task. Rather, the combined system would allocate processing resources based on grouping software, associate the affinity groups including multiple processing resources with the tasks based on user preferences and the system would not address processing requirements of particular tasks, as Stefaniak does not teach or suggest this limitation.

Therefore, Applicants respectfully request reconsideration and withdrawal of the present rejection. Should the Examiner maintain the rejection, Applicants respectfully request a showing, including column and line numbers specifically delineating where Stefaniak explicitly teaches or suggests the allocation of available processing resources among the tasks "based on the capabilities of each of the available processing resources and the processing requirement of each of the tasks." In the alternative, Applicants request the passage of claim 15 to issuance.

Claims 2-3, 5-12, 14 and 17

Claims 2-3, 5-12, 14 and 17 currently stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stefaniak in view of Combs in view of U.S. Patent No. 6,496,922 (“Borrill”).

Regarding claims 2-3 and 5-12, Applicants respectfully resubmit the above position offered with respect to claim 15. Specifically, it is submitted that Stefaniak, in combination with Combs, fails to teach or suggest, *inter alia*, allocating the available processing resources among the tasks “based on the capabilities of each of the available processing resources and the processing requirements of each of the tasks.” As noted above, Stefaniak teaches resource allocation based on user preferences and then teaches assigning tasks to associated affinity groups using user input, which is inconsistent with processing resources based on the available resource capabilities and task-based processing requirements.

It is further submitted that these claims contain further patentable subject matter in view of the prior art of record. Specifically, even if one of ordinary skill in the art further combined the combination of Stefaniak and Combs with the teachings of Borrill, this would still fail to teach or suggest resource allocation based on availability and task requirements.

Therefore, regarding claims 2-3 and 5-12, Applicants submit the present rejection is improper and should be withdrawn. As noted above, should the Examiner maintain the rejection, a showing regarding independent claim 15 (as described above) is respectfully requested. Otherwise, Applicants requested passage of the present claims to issuance.

Regarding claims 14 and 17, Applicants respectfully submit that one having ordinary skill in the art would not be motivated to combine these references. The Examiner asserts that while Combs is directed to peripheral devices performing tasks, the basic underlying principles of Stefaniak would be applicable. Applicants must respectfully disagree.

Stefaniak discloses bundling processor resources and then delineating tasks to the particular resources. In the Stefaniak system, multiple processors are group to co-extensively process operations together, sharing resources. Stefaniak is not concerned with task management beyond direct assignment. In more specific terms, the novelty of Stefaniak lies in the assembly

of the affinity groups and assigning tasks to affinity groups, wherein both the group assembly and task assignment is in response to user input. (See e.g. claim 1 of Stefaniak).

To one of ordinary skill in the art, the teachings of Combs would be superfluous. The system of Stefaniak assigns tasks based on user input. The teaching of Combs to utilize a “resource allocator system” requires multiple allocation systems in constant communication, see col. 3, lines 13-18. Constant interactivity of affinity groups of Stefaniak is completely contradictory to the disclosed operations. In other words, Stefaniak teaches away from such operating system based on the defined rules and operation of task allocation of rules. Combs would require affinity groups in constant communication about available resources and dynamic rule generation for task management, which is contrary to the teachings of Stefaniak.

Therefore, it is submitted that one of ordinary skill in the art would not have been motivated to combine Stefaniak with Combs. Furthermore, based on Stefaniak teaching away from combination with Combs, one of ordinary skill in the art would not be further motivated to combine Borrill.

As such, it is submitted the present rejection claims 14 and 17 are improper because Stefaniak teaches away from being combined with Combs. Therefore, the claimed invention of claim 17 would not be obvious in view of the teachings of Stefaniak, Combs and Borrill. Reconsideration and withdrawal is respectfully requested.

#### Claim 4

Claim 4 currently stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stefaniak in view of Combs in view of Borrill and further in view of U.S. Patent No. 4,597,041.

Regarding claim 4, Applicants respectfully resubmit the above position offered with respect to claims 2-3 and 15. Specifically, it is submitted that Stefaniak, in combination with Combs, fails to teach or suggest, *inter alia*, allocating the available processing resources among the tasks “based on the capabilities of each of the available processing resources and the processing requirements of each of the tasks.” As noted above, Stefaniak teaches resource allocation based on user preferences and then teaches assigning tasks to associated affinity

groups using user input, which is inconsistent with processing resources based on the available resource capabilities and task-based processing requirements.

It is further submitted that this claim contain further patentable subject matter in view of the prior art of record. Specifically, even if one of ordinary skill in the art further combined the combination of Stefaniak and Combs with the teachings of Borrill, this would still fail to teach or suggest resource allocation based on availability and task requirements.

Applicants submit the present rejection is improper and should be withdrawn. As noted above, should the Examiner maintain the rejection, a showing regarding independent claim 15 (as described above) is respectfully requested. Otherwise, Applicants requested passage of the present claims to issuance.

Accordingly, Applicant respectfully submits that the claims are in condition for allowance and that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below-listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

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